

## Function Operations

Date \_\_\_\_\_ Period \_\_\_\_\_

**Perform the indicated operation.**

1)  $g(n) = n^2 + 4 + 2n$   
 $h(n) = -3n + 2$   
 Find  $(g \cdot h)(1)$

2)  $f(x) = 4x - 3$   
 $g(x) = x^3 + 2x$   
 Find  $(f - g)(4)$

3)  $h(x) = 3x + 3$   
 $g(x) = -4x + 1$   
 Find  $(h + g)(10)$

4)  $g(a) = 3a + 2$   
 $f(a) = 2a - 4$   
 Find  $\left(\frac{g}{f}\right)(3)$

5)  $g(x) = 2x - 5$   
 $h(x) = 4x + 5$   
 Find  $g(3) - h(3)$

6)  $g(a) = 2a - 1$   
 $h(a) = 3a - 3$   
 Find  $(g \cdot h)(-4)$

7)  $g(t) = t^2 + 3$   
 $h(t) = 4t - 3$   
 Find  $(g \cdot h)(-1)$

8)  $g(n) = 3n + 2$   
 $f(n) = 2n^2 + 5$   
 Find  $g(f(2))$

9)  $g(x) = -x^2 - 1 - 2x$   
 $f(x) = x + 5$   
 Find  $(g - f)(x)$

10)  $f(x) = 3x - 1$   
 $g(x) = x^2 - x$   
 Find  $\left(\frac{f}{g}\right)(x)$

11)  $g(a) = -3a - 3$   
 $f(a) = a^2 + 5$   
 Find  $(g - f)(a)$

12)  $h(t) = 2t + 1$   
 $g(t) = 2t + 2$   
 Find  $(h - g)(t)$

13)  $f(x) = 2x^3 - 5x^2$   
 $g(x) = 2x - 1$   
 Find  $(f \cdot g)(x)$

14)  $h(n) = 4n + 5$   
 $g(n) = 3n + 4$   
 Find  $(h - g)(n)$

15)  $g(a) = -3a^2 - a$   
 $h(a) = -2a - 4$   
Find  $\left(\frac{g}{h}\right)(a)$

16)  $f(n) = 2n$   
 $g(n) = -n - 4$   
Find  $(f \circ g)(n)$

17)  $h(a) = 3a$   
 $g(a) = -a^3 - 3$   
Find  $\left(\frac{h}{g}\right)(a)$

18)  $g(n) = 2n + 3$   
 $h(n) = n - 1$   
Find  $(g \circ h)(n)$

19)  $h(x) = x^2 - 2$   
 $g(x) = 4x + 1$   
Find  $(h \circ g)(x)$

20)  $g(t) = 2t + 5$   
 $f(t) = -t^2 + 5$   
Find  $(g + f)(t)$

21)  $g(x) = 2x - 2$   
 $f(x) = x^2 + 3x$   
Find  $(g \circ f)(-2 + x)$

22)  $g(a) = 2a + 2$   
 $h(a) = -2a - 5$   
Find  $(g \circ h)(-4 + a)$

23)  $g(x) = 2x + 3$   
 $f(x) = 3x^2 - 3x$   
Find  $-4g(-4x) + 4f(-4x)$

24)  $g(t) = 3t - 1$   
 $f(t) = 3t^3 + t$   
Find  $(3g + 3f)(4t)$

25)  $g(x) = x^3 + 3$   
 $h(x) = 3x + 2$   
Find  $(3g + 3h)(-x)$

26)  $f(t) = t - 4$   
 $g(t) = t^3 - 3$   
Find  $(f \cdot g)(-2 - t)$

27)  $g(t) = t^3 - 3t^2$   
 $f(t) = -t - 4$   
Find  $g(-2t) - f(-2t)$

28)  $f(x) = 2x + 2$   
 $g(x) = -3x - 1$   
Find  $\left(\frac{f}{g}\right)(-4x)$

29)  $f(x) = -x - 4$   
 $g(x) = 2x^2 - 2$   
Find  $f(-2x) - g(-2x)$

30)  $g(n) = n^2 - 5n$   
 $h(n) = 2n + 1$   
Find  $g(y - 2) - h(y - 2)$

## Function Operations

**Perform the indicated operation.**

1)  $g(n) = n^2 + 4 + 2n$

$h(n) = -3n + 2$

Find  $(g \cdot h)(1)$ 

$-7$

2)  $f(x) = 4x - 3$

$g(x) = x^3 + 2x$

Find  $(f - g)(4)$ 

$-59$

3)  $h(x) = 3x + 3$

$g(x) = -4x + 1$

Find  $(h + g)(10)$ 

$-6$

4)  $g(a) = 3a + 2$

$f(a) = 2a - 4$

Find  $\left(\frac{g}{f}\right)(3)$ 

$\frac{11}{2}$

5)  $g(x) = 2x - 5$

$h(x) = 4x + 5$

Find  $g(3) - h(3)$ 

$-16$

6)  $g(a) = 2a - 1$

$h(a) = 3a - 3$

Find  $(g \cdot h)(-4)$ 

$135$

7)  $g(t) = t^2 + 3$

$h(t) = 4t - 3$

Find  $(g \cdot h)(-1)$ 

$-28$

8)  $g(n) = 3n + 2$

$f(n) = 2n^2 + 5$

Find  $g(f(2))$ 

$41$

9)  $g(x) = -x^2 - 1 - 2x$

$f(x) = x + 5$

Find  $(g - f)(x)$ 

$-x^2 - 3x - 6$

10)  $f(x) = 3x - 1$

$g(x) = x^2 - x$

Find  $\left(\frac{f}{g}\right)(x)$ 

$\frac{3x - 1}{x^2 - x}$

11)  $g(a) = -3a - 3$

$f(a) = a^2 + 5$

Find  $(g - f)(a)$ 

$-a^2 - 3a - 8$

12)  $h(t) = 2t + 1$

$g(t) = 2t + 2$

Find  $(h - g)(t)$ 

$-1$

13)  $f(x) = 2x^3 - 5x^2$

$g(x) = 2x - 1$

Find  $(f \cdot g)(x)$ 

$4x^4 - 12x^3 + 5x^2$

14)  $h(n) = 4n + 5$

$g(n) = 3n + 4$

Find  $(h - g)(n)$ 

$n + 1$

$$15) \quad g(a) = -3a^2 - a$$

$$h(a) = -2a - 4$$

$$\text{Find } \left(\frac{g}{h}\right)(a)$$

$$\frac{-3a^2 - a}{-2a - 4}$$

$$17) \quad h(a) = 3a$$

$$g(a) = -a^3 - 3$$

$$\text{Find } \left(\frac{h}{g}\right)(a)$$

$$\frac{3a}{-a^3 - 3}$$

$$19) \quad h(x) = x^2 - 2$$

$$g(x) = 4x + 1$$

$$\text{Find } (h \circ g)(x)$$

$$16x^2 + 8x - 1$$

$$21) \quad g(x) = 2x - 2$$

$$f(x) = x^2 + 3x$$

$$\text{Find } (g \circ f)(-2 + x)$$

$$2x^2 - 2x - 6$$

$$23) \quad g(x) = 2x + 3$$

$$f(x) = 3x^2 - 3x$$

$$\text{Find } -4g(-4x) + 4f(-4x)$$

$$192x^2 + 80x - 12$$

$$25) \quad g(x) = x^3 + 3$$

$$h(x) = 3x + 2$$

$$\text{Find } (3g + 3h)(-x)$$

$$-3x^3 - 6x + 13$$

$$27) \quad g(t) = t^3 - 3t^2$$

$$f(t) = -t - 4$$

$$\text{Find } g(-2t) - f(-2t)$$

$$-8t^3 - 12t^2 - 2t + 4$$

$$29) \quad f(x) = -x - 4$$

$$g(x) = 2x^2 - 2$$

$$\text{Find } f(-2x) - g(-2x)$$

$$-8x^2 + 2x - 2$$

$$16) \quad f(n) = 2n$$

$$g(n) = -n - 4$$

$$\text{Find } (f \circ g)(n)$$

$$-2n - 8$$

$$18) \quad g(n) = 2n + 3$$

$$h(n) = n - 1$$

$$\text{Find } (g \circ h)(n)$$

$$2n + 1$$

$$20) \quad g(t) = 2t + 5$$

$$f(t) = -t^2 + 5$$

$$\text{Find } (g + f)(t)$$

$$-t^2 + 2t + 10$$

$$22) \quad g(a) = 2a + 2$$

$$h(a) = -2a - 5$$

$$\text{Find } (g \circ h)(-4 + a)$$

$$-4a + 8$$

$$24) \quad g(t) = 3t - 1$$

$$f(t) = 3t^3 + t$$

$$\text{Find } (3g + 3f)(4t)$$

$$192t^3 + 40t - 3$$

$$26) \quad f(t) = t - 4$$

$$g(t) = t^3 - 3$$

$$\text{Find } (f \cdot g)(-2 - t)$$

$$t^4 + 12t^3 + 48t^2 + 83t + 66$$

$$28) \quad f(x) = 2x + 2$$

$$g(x) = -3x - 1$$

$$\text{Find } \left(\frac{f}{g}\right)(-4x)$$

$$\frac{-8x + 2}{12x - 1}$$

$$30) \quad g(n) = n^2 - 5n$$

$$h(n) = 2n + 1$$

$$\text{Find } g(y - 2) - h(y - 2)$$

$$y^2 - 11y + 17$$